Natural Resources
and their place within
Comprehensive Planning

by Patrick Robinson

Nearly all community activities interact with natural resources in some way. Housing, transportation, utilities and community facilities, economic development, and land use elements all have direct or indirect relationships to a community's natural resource base. Therefore, it is virtually impossible for a community to plan for its future without considering the opportunities, constraints, and impacts associated with its natural resources.

What are Natural Resources?

Natural resources can be defined as any material that exists in nature independently of human industry and that is utilized in some way by humans. Water, petroleum, minerals, and forests are obvious examples because we regularly use them. It is easy, however, to overlook some of the less obvious ways that natural resources are a part of our daily life.

If we really stop to think about it, everything we come into contact with – from the air we breathe to the road we drive on – is somehow related to our natural resources. By communicating a clear definition, we can ensure that everyone involved in the comprehensive planning process understands the many ways that natural resources are a part of everybody's life.

Natural Resources and the Comprehensive Planning Law

Wisconsin's Comprehensive Planning Law describes agricultural, natural and cultural resources as a single element in the comprehensive planning process. Under this law, a community could choose to integrate agricultural, natural and cultural resources into one element. However, communities will probably find it more effective to address these three interrelated items separately.

This fact sheet is designed to be a brief introduction to natural resources and their place within the comprehensive planning process.

An Evolutionary Story of Natural Resource Perceptions: Our Wetland History

For most of Wisconsin's history, our predecessors looked at wetlands as areas of little importance, as "wastelands" that became valuable only after they were drained or filled. In 1850, the United States Supreme Court stated in the Swamp Land Act that "…swamps and stagnant waters are the cause of malaria and malignant fevers, and that public power is never more legitimately exercised than in removing such nuisances."

As a result of these policies, half of Wisconsin's original 10 million acres of wetlands were lost and many of our remaining wetlands are degraded. Over the past three decades, the vital role wetlands play in maintaining the overall health of our environment has become much clearer. Wetlands can protect surface and drinking water quality, prevent flooding, provide wildlife habitat, and generate revenue through recreational opportunities (Thompson and Luthin, 2000).

As communities plan, it is important that they consider all of the values that their natural resources can provide. The majority of Wisconsin's wetlands are privately owned, and community planning can be an important tool for long-term wetland management.

Why are Natural Resources Part of the Planning Process?

In many ways, natural resources are a part of the planning process because people want them to be. Community residents often equate their quality of life with the health of their natural resources. The American Planning Association conducted a national survey in 2000 to identify the planning issues that citizens believe are most important to their communities. After education, the second-highest concern is the creation and protection of parks and recreation areas (69%), closely followed by preserving farmland and open space (67%), and protecting wetlands and other natural areas (65%). National, state, and local survey results consistently show that people value natural resources and consider them an important component of their community.

Economic development opportunities are often linked to the natural resource base. In Wisconsin in 1991, for example, $225 million in retail sales and jobs were generated by people watching and feeding birds.

The Dollars and Sense of Natural Resources

In Wisconsin, we are blessed with over 15,000 lakes, 32,000 miles of perennial rivers and streams, 5 million acres of wetlands, and 16 million acres of forests. Unfortunately, many of our lakes and rivers have been degraded, half of our wetlands have been lost, much of our forests have been cleared, and less than one percent of our prairies remain. While there are certainly ecological impacts from the loss and degradation of these natural habitats, there are also economic impacts that need to be considered. Because our state is rich in natural resources, much of our economic development has been tied to the state's natural resource base. Below are some examples of the economic impacts from natural resources in our state:

- Our natural resources and the recreation and relaxation that they offer anchor our $11 billion tourism industry.
- In 2001, sport anglers spent more than $1.2 billion on fishing related items and trips in Wisconsin.
- Over 1,800 companies in the timber industry employ over 99,000 people with a payroll of over $3.6 billion dollars (Wisconsin Department of Natural Resources, 2000).

The presence of abundant, healthy natural resources can help to maintain a strong local and statewide economy.

Natural Resources Planning – Key Components

Regional Cooperation

Since natural resources such as lakes or rivers do not follow political or jurisdictional boundaries, communities are often faced with the realization that successful planning requires cooperation with neighboring communities. This cooperation can lead to regional plans and collaborative opportunities that improve the planning process, as well as the health of regional natural resources and the quality of life for area residents.

Natural Resources Inventory

A detailed natural resources inventory is necessary when preparing a comprehensive plan because the extent, type, locations, limitations, and benefits of natural resources will affect planning and policy judgments. A good way to describe natural resources is with a brief narrative and maps. Geographic information system (GIS) technology has greatly improved our ability to produce maps and other graphics to help community planners and citizens better understand their natural resources. The sources of information that can be drawn upon during the natural resource inventory work varies among communities. Some communities may already have thorough inventory data, but other communities may need to access data from federal, state, regional, county, or private sources.

Education

In order to effectively prioritize natural resources in a comprehensive planning process, it is necessary to understand the role that natural resources play in your community. For instance, in order to understand how important it is to protect groundwater resources, people need to know that approximately two-thirds of all Wisconsin citizens get their drinking water from groundwater sources (Wisconsin Department of Natural Resources, 1998). Planning for natural resources should include a strategy for educating planning participants about the natural resources in their community. An educational program doesn't have to be complicated. It can be as simple as a brief presentation on each of the major natural resource features in your community, such as wetlands, large forested blocks, prairies, or groundwater.

Integration with Other Elements

Natural resources have an impact on all of the other planning elements, and all of the other planning elements have an impact on natural resources. A community can allow impacts related to natural resources to happen without prior consideration, or they can choose to plan for and define impacts related to natural resources. For example, storm water management can occur in a manner that conveys water effectively without consideration of water quality. On the other hand, it can be planned to convey water while also protecting water quality. By proactively considering natural resources and integrating them into all planning decisions, a community can better control the future of their natural resources, and ultimately their community.

Examples of Natural Resource Information to Inventory

- Parks and recreational areas
- Open space
- Navigable waters, wetlands, ponds, streams, floodplains, and shorelands
- Environmentally sensitive areas, endangered/threatened species, natural areas
- Aquifers and their recharge areas
- Soils, topography, drainage patterns, and storm water management
- Agricultural lands (prime soils, unique agricultural lands)
- Forests, woodlands, prairies, and other vegetation cover types
- Historic and archeological sites
- Landfills and brown fields
- Aggregate resources, such as sand and gravel deposits
- Natural geologic features and scenic areas
- Ridgetops, blufflands, and areas with steep slopes
- Air quality
- Local energy resources

Source: University of Wisconsin-Extension and Wisconsin Department of Natural Resources, 2002

Potential Sources of Natural Resource Data

- U.S. Fish and Wildlife Service
- U.S.D.A. Natural Resources Conservation Service
- Universities and colleges
- Regional Planning Commissions
- Wisconsin Department of Natural Resources
- County land & water conservation departments
- County planning departments
- Private planning consultants

Summary

A good comprehensive plan considers all planning elements and how they are related. Natural resources provide the foundation upon which communities are created and upon which all our lives depend. Survey results consistently show that people value natural resources and consider them an important part of community planning. In addition, protecting the health of our natural resources is an important part of maintaining a vital local, regional, and statewide economy. A comprehensive plan that carefully considers and integrates natural resources along with all other planning elements can provide a community with a blueprint for its preferred future.

Patrick Robinson

Additional Resources

Planning for Natural Resources: A Guide to Including Natural Resources in Local Comprehensive Planning

Can be viewed on the web at www.dnr.state.wi.us/org/es/science/landuse/smart_growth/ index.htm or ordered by calling 1-877-947-7827

Smart Forestry for Smart Growth

Can be ordered by calling the Wisconsin Department of Natural Resources at 608-267-7494 and asking for publication number PUB-FR-243 2003

Wisconsin's Comprehensive Planning Legislation: What It Means for Wildlife

Can be viewed on the web at www.dnr.state.wi.us/org/es/science/landuse/smart_growth/index.htm or ordered by calling the Wisconsin Department of Natural Resources at 608-266-8204 and asking for publication number PUB-WM-366-2001

Comprehensive Planning and Groundwater Fact Sheet Series:

- ***Groundwater and It's Role in Comprehensive Planning***
- ***Resources to Help You Protect Your Drinking Water Supply***
- ***Residential Development and Groundwater Resources***

Can be viewed on the web at www.dnr.state.wi.us/org/es/science/landuse/smart_growth/index.htm

UW Extension

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